

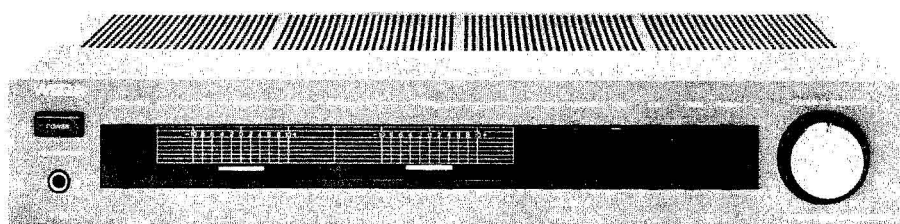
WEGA

HIFI STEREO AMPLIFIER

V135

Service Manual

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SPECIFICATIONS

Power Output:	2 x 35W, 4 Ω (1 kHz)
Music Power Output:	2 x 55W, 4 Ω (1 kHz)
Distortion (1 kHz):	0.05%
Frequency Response:	20 Hz – 20 kHz (30W, 0.1%)
Signal to Noise Ratio:	
Phono MM;	78 dB Weighted A (IHF)
Tuner;	95 dB Weighted A (IHF)
Tape;	95 dB Weighted A (IHF)
Input Sensitivity:	
Phono MM	2.5mV/47 k Ω
Tuner;	150mV/47 k Ω
Tape;	150mV/47 k Ω
Tone Control	
Bass;	± 10 dB/100 Hz
Treble;	± 10 dB/10 kHz
Speaker:	4 Ω . . .
Power Requirement:	220V/50 Hz
Power Consumption:	250W
Dimensions (W x H x D):	430 x 80 x 317 mm
Weight:	5.6 kg

0

+23 dBs (SPEAKER 30W/4Ω)

-14.5 dBs (TUNER, AUX, TAPE, REC OUT)

-50 dBs (PHONO-MM)

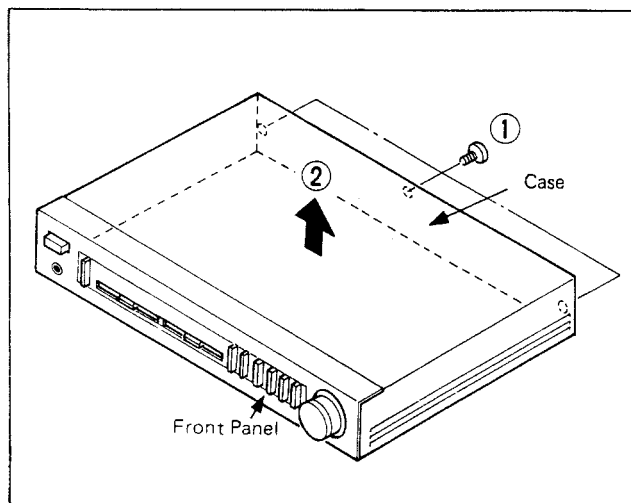
-60 dBs (PHONO-MC)

SECTION 2 DISASSEMBLY

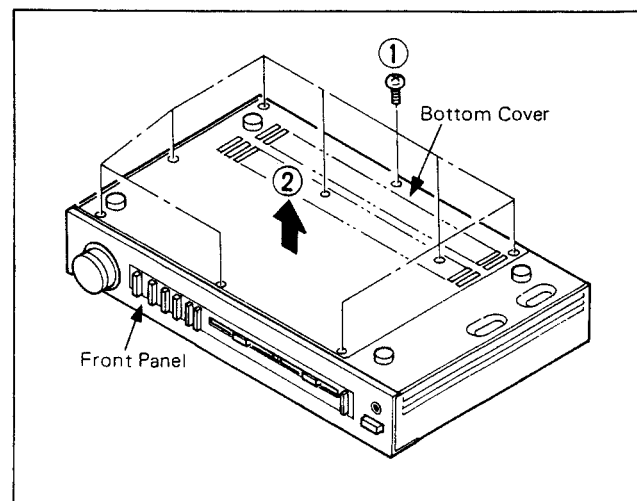
Removal

Follow the disassembly procedure in the numerical order given.

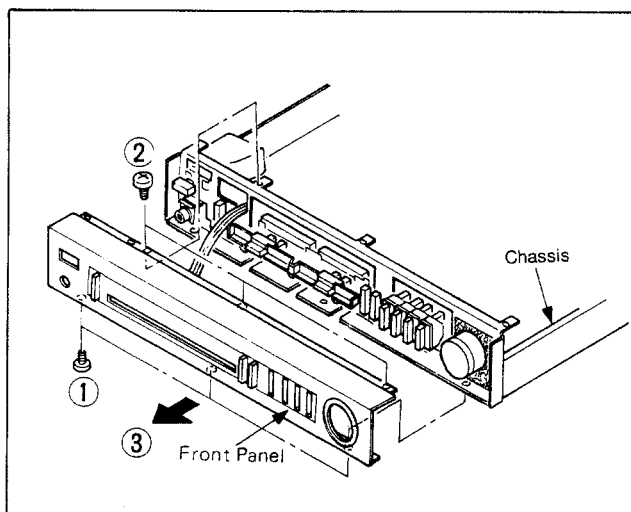
a. Case Removal



b. Bottom Cover Removal



c. Front Panel Removal



SECTION 3 ELECTRICAL ADJUSTMENT

Note:

1. DC bias adjustments should be made several minutes later after the power switch is turned on.
2. After replacing the power transistors, DC bias adjustments should be made.

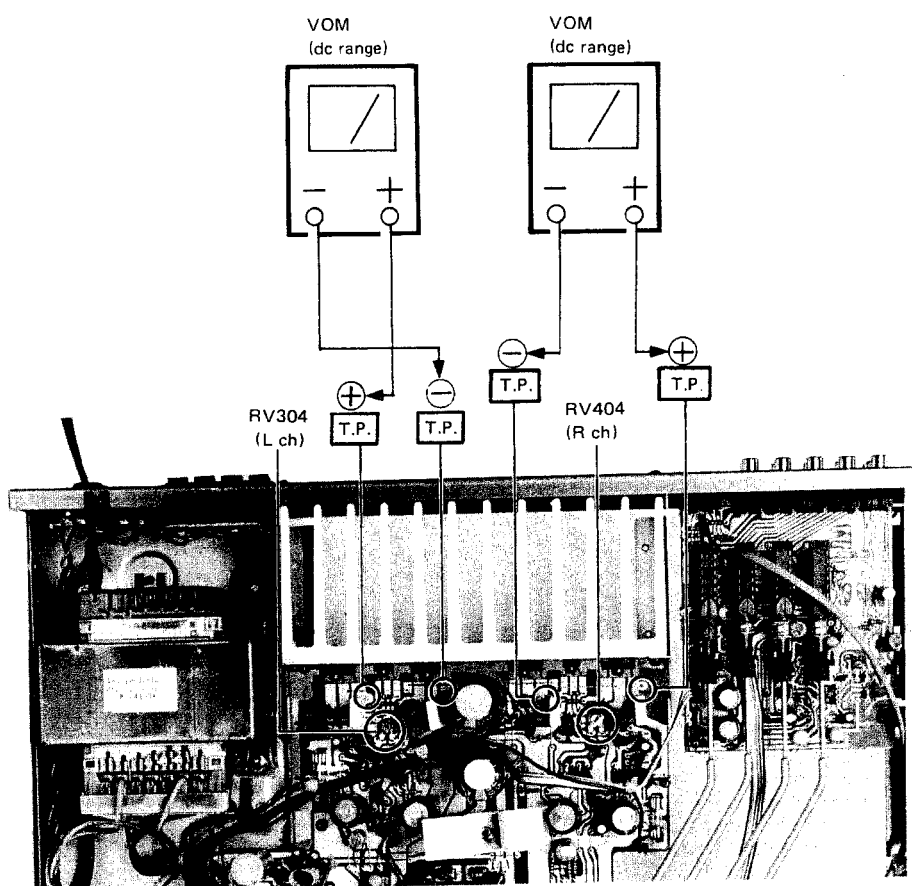
DC Bias Adjustment (with no signal input)

— L ch —

Adjust RV304 for 13 mV
dc reading on VOM

— R ch —

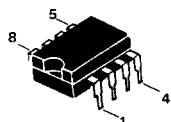
Adjust RV404 for 13 mV
dc reading on VOM



SECTION 4 DIAGRAMS

4-1: Replacement Semiconductors

IC101 : TL4558P

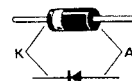


Q304, 305, }
Q404, 405 } 2SC2362G
Q551, 552: 2SC536KG
Q553, 554: 2SC536G

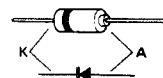


Q301, 302, 303, }
Q401, 402, 403 } 2SA1016G
Q555: 2SA608F

D502, 551: DS135E



D301, 302, 303, }
D401, 402, 403, } DS448
D552
D503: GZA9.1L
D553: GZA16L



Q307, 309, }
Q407, 409 } 2SD438F

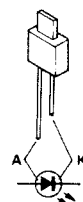


Q306, 312, }
Q406, 412 } 2SB560F



Q308, 408: 2SC1846R

D351, 352: SLP251D



Q501: 2SD325E

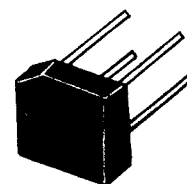


Q310, 410: 2SD895E

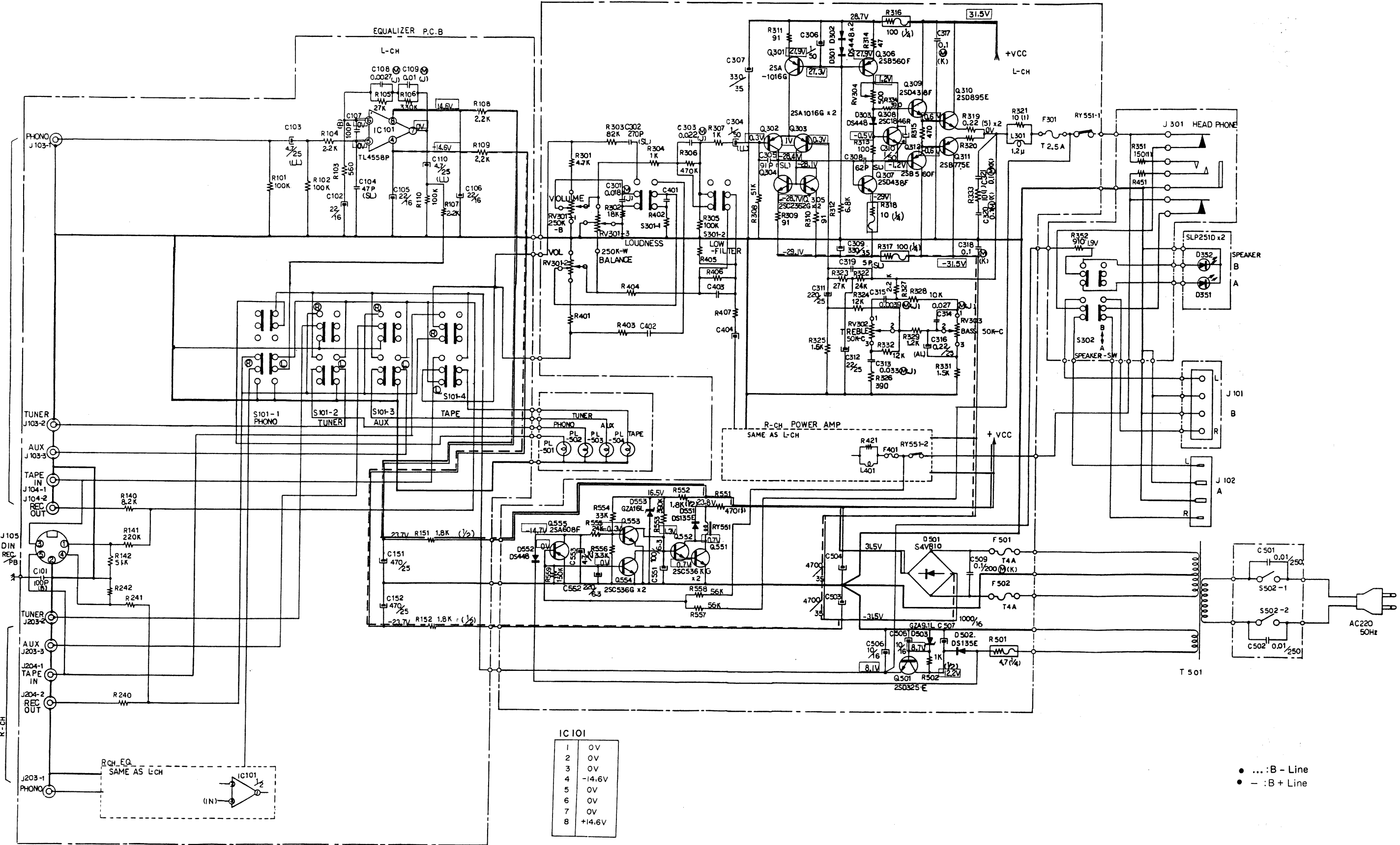


Q311, 411: 2SB775E

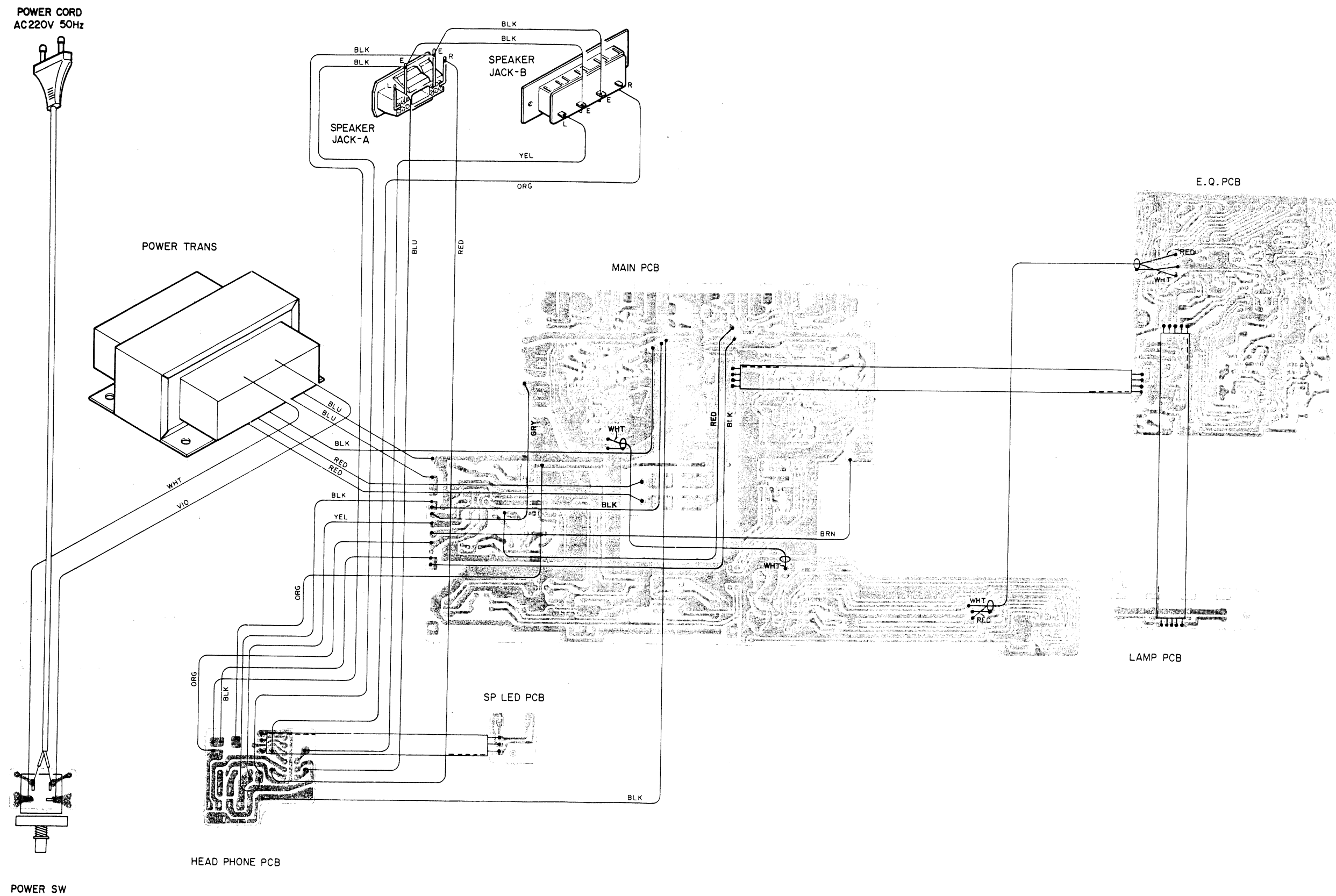
D501: S4UB10



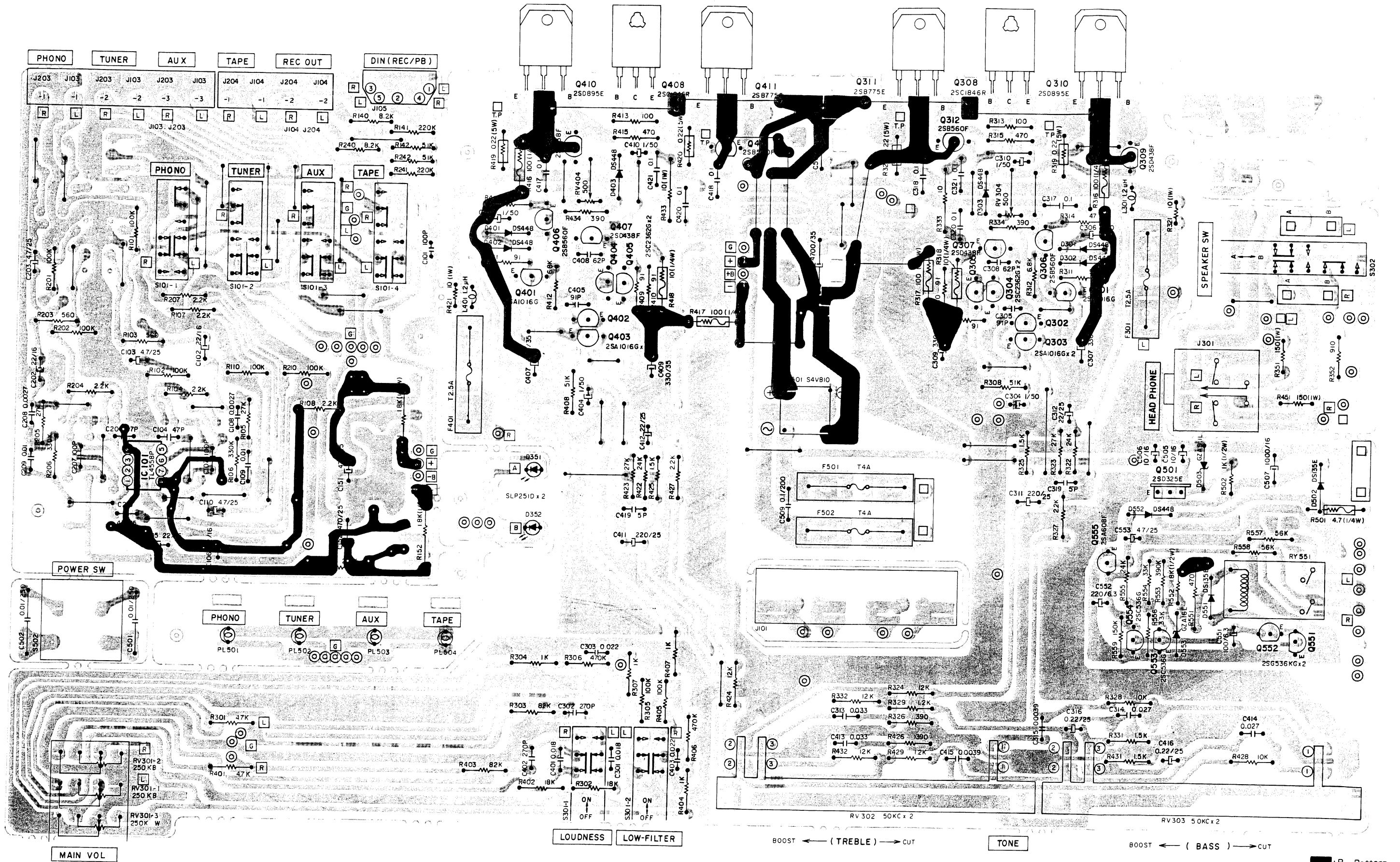
4-2: Schematic Diagram



4-3: Wiring Diagrams



4-4: Mounting Diagrams

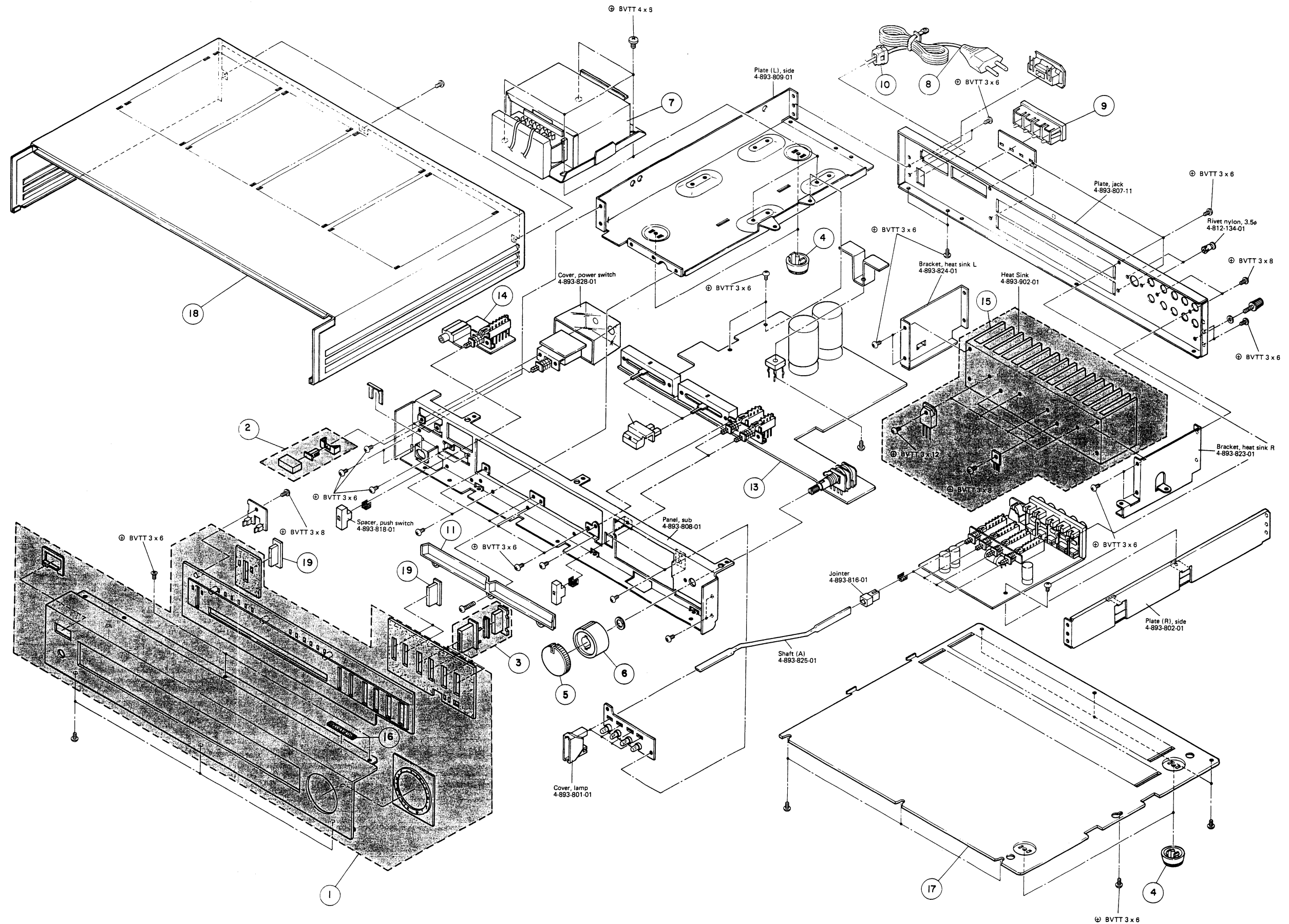


■: B - Pattern
 ■: B + Pattern

SECTION 5

EXPLODED VIEWS

5-1: Exploded View



SECTION 6 PARTS LIST

– Cabinet –

Illus. No.	Parts No.	Parts Name
1	A-4322-400-A	Panel Ass'y, front with Escutcheon, power knob Escutcheon Label Cushion, speaker Cushion, function Cushion Panel, front
2	A-4490-110-A	Knob Ass'y, power
3	A-4490-111-A	Knob Ass'y, band
4	X-4701-069-1	Foot Ass'y, M.F.
5	X-4893-801-1	Knob Ass'y, volume
6	X-4893-802-1	Knob Ass'y, balance
7	1-447-078-11	Transformer, power
8	1-551-958-11	Cord, power
9	1-561-744-11	Socket, connector
10	3-703-244-02	Bushing, cord
11	4-893-832-01	Spacer, tone
12	A-4335-198-A	PC Board Ass'y
13	A-4351-286-A	Mounted PC Board, main
14	A-4409-559-A	Mounted BCBoard, headphone
15	A-4490-112-A	Heat Sink
16	3-557-827-01	Cushion, button
17	4-875-160-01	Plate, bottom
18	4-895-173-21	Case
19	4-893-819-01	Knob, speaker (push)

– Accessories and Packing materials –

Parts No.	Description
3-701-630-01	Bag, polyethylene
3-783-666-01	Manual, instruction
4-893-811-01	Cushion (R)
4-893-812-01	Cushion (L)
4-893-839-01	Sheet, protection
4-893-844-01	Cushion, sub

Electrical Parts List

Ref. No.	Parts No.	Description
SEMICONDUCTORS		
— ICs —		
IC101	1-806-279-11	TL4558P
IC601, 602	8-759-904-89	TL489CP
— Transistors —		
Q101, 102 201, 202	8-729-224-02	2SC2240BL
Q151	1-806-032-11	2SC536K-G
Q152	1-806-269-41	2SA608K-G
Q301, 401 302, 402 303, 403	1-806-271-21	2SA1016-G
Q304, 404 305, 405	1-806-276-21	2SC2362-G
Q306, 406 312, 412	1-806-272-31	2SB500-F
Q307, 407 309, 409	8-729-843-83	2S0438-F
Q308, 408	1-806-275-31	2SC1846-R
Q310, 410	1-806-278-21	2SD896-E
Q311, 411	1-806-274-21	2SB776-E
Q501	1-806-333-31	2SD400-F
Q551, 552	1-806-032-11	2SC536K-G
Q553, 554	1-800-830-11	2SC536-G
Q555	1-800-831-11	2SA608-F
— Diodes —		
D101, 102	8-719-902-52	SLP251D
D150, 151	1-806-266-11	ZENER, GZA16L
D301, 401 302, 402 303, 403 552	1-806-268-11	DS448
D501	8-719-504-01	D4BB10
D502, 551	1-806-267-11	DS135E
D503	8-719-191-25	RD9.1EB2
D551, 352	8-719-902-52	SLP251D
D553	1-806-266-11	ZENER, GZA16L
D601, 602 603, 604 605, 606 607, 608 609, 610 611, 612	8-719-902-52	SLP251D
D613, 614 615, 616	8-719-922-12	1S188AB
D617, 618	1-806-268-11	DS448

Ref. No.	Parts No.	Description
RESISTORS		
<i>All Resistors are in Ω. Common $\frac{1}{4}W$ Carbon Resistors are omitted. Refer to the list on Page 20 for their part numbers</i>		
R316, 317 416, 417	1-212-881-51	100, Fuse
R319, 320, 419, 420	1-217-156-11	0.22, 5W
R551	1-213-139-51	470, 1W
RV301	1-228-369-11	250k, variable
RV304	1-226-232-11	500
RV302, 303	1-228-370-11	50k, variable, slide
CAPACITORS		
<i>All Capacitors are in μF, and Ceramic unless otherwise noted. 50WV or less are not indicated excepted for electrolytics. Common Capacitors are omitted. Refer to the lists on Page 17 and 18 for their Part No.</i>		
C101, 107, 201	1-102-106-21	100PF
C151, 251	1-123-336-11	470, 25V
C307, 309, 407, 709	1-123-362-11	330, 30V
C311, 411	1-123-334-11	220, 25V
C316, 416	1-127-449-11	0.22, 25V, aluminum
C501, 502	1-130-455-11	0.01, 250V
C503, 504	1-123-956-11	4700, 35V
MISCELLANEOUS		
F301, 401	1-532-286-11	Fuse, Time-Lag
F501, 502	1-532-350-11	Fuse, Time-lag
J101	1-536-646-11	Terminal Board
J102	1-561-744-11	Socket, connector
J103, 203	1-507-757-11	Jack, Pin 6P
J104, 204	1-507-652-11	Jack, Pin 4P
J105	1-509-922-11	Socket, connector, DIN
J301	1-507-729-11	Jack, Large type
JP333	1-535-200-31	Lead, jamper
L301, 401	1-420-838-12	Coil
PL501, 502, 503	1-518-483-11	Lamp, pilot
RY551	1-515-348-11	Relay
S101	1-533-837-11	Switch, push
S301	1-533-836-11	Switch, push
S302	1-533-835-11	Switch, push
S502	1-553-834-11	Switch, push
T501	1-447-076-11	Transformer, power
	1-533-131-11	Holder, fuse
	1-535-117-12	Terminal
	4-893-836-01	Terminal
	0-106-706-00	PC Board, EQ
	A-4409-554-A	Mounted PCB, Headphone
	1-535-139-11	Base post
	A-4409-548-A	Mounted PCB, lamp
	4-893-835-01	Bushing, Rubber
	A-4409-551-A	Speaker terminal
	A-4409-552-A	LED, speaker
	A-4490-112-A	Heat Sink
	4-893-838-01	Sheet, myca

(3) Electrical Parts List – Common. –

ELECTROLYTIC CAPACITORS

Note: Circled letter (A to Z) are applicable to European models only.

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47						1-121-726-00 (A)
1.0						1-121-391-00 (A)
2.2						1-121-450-00 (A)
3.3	→	→	→	1-121-392-00 (A)	→	1-121-393-00 (A)
4.7	→	→	→	1-121-395-00 (A)	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	—	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (E)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	—
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (F)	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	—	1-123-028-00 (B)
3.3	1-121-995-00 (A)	—	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	—	—
47	1-123-251-00 (C)	1-121-919-00 (C)	—	—
100	1-123-084-00 (E)	—	—	—

CERAMIC CAPACITORS (A)

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

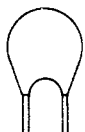
CERAMIC (SEMICONDUCTOR) CAPACITORS (A)

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS (A)

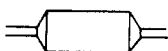
Note: Circled letters ((A) to (Z)) are applicable to European models only.

RATING											
CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

RATING							
→ : Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00 (B)
0.015					→	→	1-131-397-00 (B)
0.022					→	→	1-131-398-00 (B)
0.033					→	→	1-131-399-00 (B)
0.047					→	→	1-131-400-00 (B)
0.068					→	→	1-131-401-00 (B)
0.1					→	→	1-131-402-00 (B)
0.15					→	→	1-131-403-00 (B)
0.22					→	→	1-131-404-00 (B)
0.33					→	→	1-131-405-00 (B)
0.47	—	—	—	—	1-131-412-00 (B)	→	1-131-406-00 (B)
0.68	—	—	—	1-131-415-00 (B)	→	1-131-410-00 (B)	1-131-407-00 (B)
1.0	—	—	1-131-418-00 (B)	—	1-131-413-00 (B)	→	1-131-408-00 (B)
1.5	—	1-131-421-00 (B)	—	1-131-416-00 (B)	→	1-131-411-00 (B)	1-131-348-00 (B)
2.2	1-131-424-00 (B)	—	1-131-419-00 (B)	—	1-131-414-00 (B)	1-131-355-00 (B)	1-131-349-00 (B)
3.3	—	1-131-422-00 (B)	—	1-131-417-00 (B)	1-131-362-00 (B)	1-131-356-00 (B)	1-131-350-00 (B)
4.7	1-131-425-00 (B)	—	1-131-420-00 (B)	1-131-369-00 (B)	1-131-363-00 (B)	1-131-357-00 (B)	1-131-351-00 (C)
6.8	—	1-131-423-00 (B)	1-131-376-00 (B)	1-131-370-00 (B)	1-131-364-00 (B)	1-131-358-00 (C)	1-131-352-00 (C)
10	1-131-426-00 (B)	1-131-383-00 (B)	1-131-377-00 (B)	1-131-371-00 (B)	1-131-365-00 (C)	1-131-359-00 (C)	1-131-353-00 (D)
15	1-131-390-00 (B)	1-131-384-00 (B)	1-131-378-00 (B)	1-131-372-00 (B)	1-131-366-00 (C)	1-131-360-00 (D)	—
22	1-131-391-00 (B)	1-131-385-00 (B)	1-131-379-00 (C)	1-131-373-00 (C)	1-131-367-00 (D)		
33	1-131-392-00 (B)	1-131-386-00 (C)	1-131-380-00 (C)	1-131-374-00 (D)			
47	1-131-393-00 (C)	1-131-387-00 (C)	1-131-381-00 (D)				
68	1-131-394-00 (B)	1-131-388-00 (C)	—	—			
100	1-131-395-00 (D)	—	—	—			



TANTALUM CAPACITORS

RATING						
CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00 (E)
0.047						1-131-274-00 (E)
0.068						1-131-275-00 (E)
0.1						1-131-276-00 (D)
0.15						1-131-277-00 (D)
0.22			—	—	1-131-262-00 (D)	1-131-278-00 (D)
0.33			—	—	1-131-263-00 (D)	1-131-279-00 (D)
0.47			1-131-169-00 (D)	—	1-131-264-00 (D)	1-131-280-00 (D)
0.68			—	1-131-258-00 (D)	1-131-265-00 (D)	1-131-281-00 (D)
1.0			1-131-254-00 (D)	—	1-131-266-00 (D)	1-131-282-00 (D)
1.5		1-131-250-00 (D)	—	—	1-131-267-00 (D)	1-131-283-00 (E)
2.2		—	—	1-131-259-00 (D)	1-131-268-00 (D)	1-131-284-00 (E)
3.3		—	1-131-255-00 (D)	—	1-131-269-00 (D)	—
4.7		1-131-251-00 (E)	1-131-171-00 (D)	—	1-131-270-00 (D)	—
6.8		—	—	1-131-260-00 (D)	1-131-271-00 (E)	—
10	—	—	1-131-256-00 (D)	—	1-131-272-00 (E)	—
15	—	1-131-252-00 (D)	—	1-131-261-00 (E)		
22	—	—	1-131-257-00 (E)	—		
33	1-131-176-00 (D)	1-131-253-00 (E)	1-131-173-00 (C)	—		
47	1-131-288-00 (F)	1-131-174-00 (D)	—	—		
100	1-131-177-00 (D)	—	—	—		

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1/4 WATT CARBON RESISTORS ①

Note: Circled letter ① is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

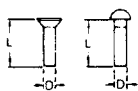
P 3 x 10

L: Length in mm
D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means
cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSP		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
PSW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	